


APPENDIX A

Advisories for Eating Fish & Crabs Caught in the Newark Bay Complex

To view these advisories on the Internet visit: www.nj.gov/dep/dsr/njmainfish.htm

FISH AND CRAB CONSUMPTION ADVISORIES BASED ON PCBs or DIOXIN CONTAMINATION

LOCATION	SPECIES	ADVISORY/PROHIBITION		
		General Population ^{1,2} Range of Recommended Meal Frequency		High-Risk Individual ^{2,3} Recommended Meal Frequency
		Lifetime Cancer Risk of 1 in 10,000	Lifetime Cancer Risk of 1 in 100,000	DO NOT EAT MORE THAN
		DO NOT EAT MORE THAN	DO NOT EAT MORE THAN	
Newark Bay Complex (for other species see Statewide advisories) ⁴				
This complex includes Newark Bay, Hackensack River downstream of Oradell Dam, Arthur Kill, Kill Van Kull, tidal portions of all rivers and streams that feed into these water bodies.	Blue crab*	Do not eat or harvest ⁵		
	Striped bass*	Do not eat		Do not eat
	American eel*	One meal per year	Do not eat	Do not eat
	White perch			
	White catfish			
Passaic River downstream of Dundee Dam and streams that feed into this section of the river.	All fish and shellfish*	Do not eat		Do not eat
	Blue crab*	Do not eat or harvest ⁵		
New Jersey Statewide - All Water Bodies (for areas without specific advisories)				
	Bluefish (over 6 lbs/24 inches)	Four meals per year	Do not eat	Do not eat
	Bluefish (less than 6 lbs/24 inches)	Once a month	One meal per year	Do not eat

* Selling any of these species from designated water bodies is prohibited in New Jersey (N.J.A.C. 7:25-18A.4).

1 Range of Recommended Meal Frequency corresponds to a cancer risk of 1 in 10,000 to 1 in 100,000 over a lifetime.

2 Eat only the fillet portions of the fish. Use proper trimming techniques to remove fat, and cooking methods that allow juices to drain from the fish (e.g., baking, broiling, frying, grilling, and steaming). See text for full description. One meal is defined as an eight-ounce serving.

3 High-risk individuals include infants, children, pregnant women, nursing mothers and women of childbearing age.

4 Advisories based on dioxin remain in effect for American lobster; and the Newark Bay Complex, except for white perch, white catfish, and American eel, which are based on PCBs.

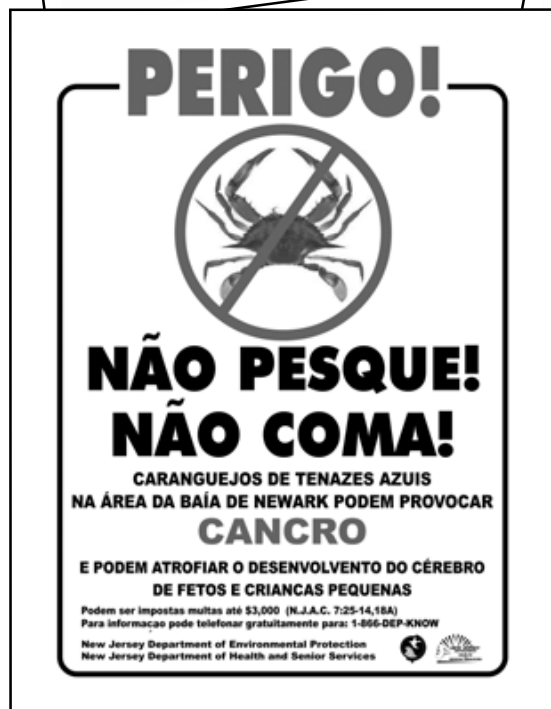
5 No harvest means no taking or attempting to take any blue crabs from these waters.

APPENDIX B

Sample

Community Awareness Sign

Regarding Blue Crabs in the Newark Bay Complex



APPENDIX C

Field Trip Suggestions

(Get Your Hands & Feet Wet)

Edison National Historic Site

National Park Service
Main Street & Lakeside Avenue
West Orange, NJ 07052
(973) 736-0550
www.fieldtrip.com/nj/17360550.htm

Flat Rock Brook Nature Center

443 Van Nostrand Avenue
Englewood, NJ 07631
(201) 567-1265
<http://www.flatrockbrook.org>

Fort Lee Historic Park

Hudson Terrace
Fort Lee, NJ 07024
(201) 461-1776
www.fieldtrip.com/nj/14611776.htm

Hackensack RiverKeeper, Inc.

231 Main Street
Hackensack, NJ 07601
(201) 968-0808
www.hackensackriverkeeper.org

Jersey City Museum

472 Jersey Avenue
Jersey City, NJ 07303
(201) 547-4514
www.jerseycitymuseum.org

Liberty Science Center

Liberty State Park
Jersey City, NJ 07305
(201) 200-1000
www.lsc.org

Liberty State Park Interpretive Center

Freedom Way
Jersey City, NJ 07305
www.libertystatepark.com

Meadowlands Museum

91 Crane Avenue
Rutherford, NJ 07070
(201) 935-1175
www.fieldtrip.com/nj/19351175.htm

Museum of Early Trades & Crafts

Main Street at Green Village Road
Madison, NJ 07940
(973) 377-2982
www.rosenet.org/metc

Newark International Airport

Tour for grades 3-12
Port Authority of NY & NJ
Newark, NJ 07114
(973) 961-6264
www.fieldtrip.com/nj/19616264.htm

New Jersey Historical Society

52 Park Place
Newark, NJ 07102
(973) 596-8500
www.jerseyhistory.org

New Jersey Meadowlands Environment Center

2 DeKorte Park Plaza
Lyndhurst, NJ 07071
(201) 460-1700
www.meadowlands.state.nj.us

APPENDIX C (continued)

Field Trip Suggestions

(Get Your Hands & Feet Wet)

The Newark Museum

49 Washington Street
Newark, NJ 07101
(201) 596-6550
www.newarkmuseum.org

Paterson Museum

2 Market Street
Paterson, NJ 07501
(973) 881-3874
www.fieldtrip.com/nj/18813874.htm

Stueben House (historical site)

River Edge, NJ 07661
(201) 487-1739

Tenaflly Nature Center

313 Hudson Avenue
Tenaflly, NJ 07670
(201) 568-6093
www.tenafllynaturecenter.org

TurtleBack Zoo

560 Northfield Avenue
West Orange, NJ 07052
(973) 731-5800
www.turtlebackzoo.org

APPENDIX D

Who to Contact for Information



BUSINESS / COMMERCIAL

Bergen County Utilities Authority

Foot of Mehrhof Road
PO Box 9
Little Ferry, NJ 07643
(201) 641-2552
www.bcua.org

**Public Service Electric & Gas,
The Electric Universe**

80 Park Plaza
Newark, NJ 07101
<http://pseg.electricuniverse.com>

Passaic Valley Water Commission

1525 Main Avenue
Clifton, NJ 07011
(201) 340-4300
www.pvwc.com

United Water New Jersey

200 Old Hook Road
Harrington Park, NJ 07640
(201) 767-9300
www.unitedwater.com/uwnj

Port Authority of New York & New Jersey

260 Kellogg Street
Port Newark, NJ 07114
(973) 589-7100
www.panynj.com

EDUCATION / UNIVERSITY

**Environmental & Occupational Health
Sciences Institute (EOHSI)**

Resource Center, Right To Know Information
UMDNJ
Robert Wood Johnson Medical School
Brookwood II
45 Knightsbridge Road
Piscataway, NJ 08854
(908) 463-5353
www.eohsi.rutgers.edu

Institute of Marine & Coastal Sciences

Rutgers University
P.O. Box 231
New Brunswick, NJ 08903
<http://marine.rutgers.edu>

Rutgers University

www.rutgers.edu

Fairleigh Dickinson University

www.fdu.edu

APPENDIX D (continued)

Who to Contact for Information

ENVIRONMENTAL

Clean Ocean Action

P.O. Box 505
Highlands, NJ 07732
(732) 872-0111
www.cleanoceanaction.org

Greater Newark Conservancy

303-9 Washington Street
Newark, NJ 07102
(201) 642-4646
www.citybloom.org

**The New Jersey Meadowlands
Environment Center**

2 DeKorte Park Plaza
Lyndhurst, NJ 07071
(201) 460-1700
www.meadowlands.state.nj.us

Hackensack RiverKeeper, Inc.

231 Main Street
Hackensack, NJ 07601
(201) 968-0808
www.hackensackriverkeeper.org

Hudson River Sloop Clearwater, Inc.

112 Little Market Street
Poughkeepsie, NY 12601
(914) 454-7673
www.clearwater.org

Hudson Waterfront Museum

P.O. Box 1602
West New York, NJ 07093
(201) 433-8229

Ironbound Community Corporation

51 McWhorter Avenue
Newark, NJ 07105
(201) 589-3353

New Jersey Marine Science Consortium

Sandy Hook Field Station, Building 22
Fort Hancock, NJ 07732
(732) 872-1300
www.njmsc.org

New Jersey Audubon Society

Department of Education
c/o Scherman/Hoffman Wildlife Sanctuary
PO Box 693
Bernardsville, NJ 07924
www.njaudubon.org

NY/NJ BayKeeper / Raritan Riverkeeper

Sandy Hook Marine Laboratory
Building 18
Highlands, NJ 07732
(732) 291-0176
www.nynjbaykeeper.org

Passaic River Coalition

246 Madisonville Road
Basking Ridge, NJ 07920
(908) 766-7550
www.passaicriver.org

Rutgers Environmental Law Clinic

15 Washington Street, Room 334
Newark, NJ 07102-3192
(201) 648-5576

Turtle Back Zoo

560 Northfield Avenue
West Orange, NJ 07052
(201) 731-5801
www.turtlebackzoo.org

APPENDIX D (continued)

Who to Contact for Information

FISHING

Jersey Coast Anglers Association

1201 Route 37 East, Suite 9

Toms River, NJ 08752

(732) 506-6565

www.jcaa.org

**Harbor Watershed Education
and Urban Fishing Program**

www.state.nj.us/dep/dsr/urban-fishing.htm

**The New Jersey Chapter of the
Hudson River Fisherman's Association**

P.O. Box 421

Cresskill, NJ 07626

(201) 869-7843 or (201) 837-2400

www.hrfan.org

GOVERNMENT

Fish & Seafood Development Program

New Jersey Department of Agriculture

PO Box 330, 2nd Floor, Room 204

Trenton, NJ 08625

U.S. Environmental Protection Agency**National Estuary Program****NY/NJ Harbor Estuary**

www.epa.gov/owow/estuaries

New Jersey Department of**Environmental Protection****Division of Science, Research & Technology**

PO Box 409

401 East State Street, 1st Floor

Trenton, NJ 08625-0409

www.state.nj.us/dep/dsr

New Jersey Department of**Environmental Protection****Division of Watershed Management**

PO Box 418

Trenton, NJ 08625

www.state.nj.us/dep/watershedmgt

New Jersey Department of**Environmental Protection****Division of Fish & Wildlife**

PO Box 400

501 East State Street, Floor 3

Trenton, NJ 08625-0400

www.state.nj.us/dep/fgw

New Jersey Marine Education Association

hometown.aol.com/newjerseymeag

APPENDIX D (continued)

Who to Contact for Information

REGULATORY / ENFORCEMENT

**New Jersey State Police
Patrol Support Bureau**

Marine Services Unit
P.O. Box 7068
West Trenton, NJ 08628-0068
(609) 882-2000 Ext. 6181

**New Jersey Department of
Environmental Protection
Compliance and Enforcement**

1-877-WARNDEP
www.state.nj.us/dep/enforcement

**U.S. Coast Guard
Marine Safety, Security
and Environmental Protection**

www.uscg.mil/hq/g-m

APPENDIX E

Public Access To Our Waterways

(It's Closer Than You Think)

ARTHUR KILL & TRIBUTARIES

Carteret Pier

Carteret

Elizabeth Marina

First Street

Elizabeth

Perth Amboy Marina

Smith Street

Perth Amboy

Woodbridge Boat Launch

Cliff Road and Ferry Street

Woodbridge

HACKENSACK RIVER

Hackensack River County Park

Access at Riverside Square Mall (Rt. 4)

Hackensack

Losen Slote Creek Park

Merhrhof Road

Little Ferry

Laurel Hill County Park Public Boat Launch

New County Road

Secaucus

Snipes Park

Meadowlands Parkway

Secaucus

New Jersey Meadowlands Commission

2 DeKorte Park Plaza (and end of Valley Brook Ave.)

Lyndhurst

Mill Creek Park

Mill Creek Road

Secaucus

The Alfis Tract

End of River Lane

New Milford

Overpeck Park

Fort Lee Road

Teaneck, Leonia, Palisades Park, and Ridgefield Park

Waterside Park

Behind Department of Public Works on

Industrial Avenue

Ridgefield Park

Hackensack River Greenway

Through Teaneck Access – River Road

Teaneck

River Edge Municipal Canoe Launch

Riverside Way (far end of River Edge Swim

Club parking lot)

River Edge

APPENDIX E (continued)

Public Access To Our Waterways

(It's Closer Than You Think)

KILL VAN KULL

Mayor Dennis P. Collins Park

West 1st Street

Bayonne

NEWARK BAY

DiDomenico Park

16th Street

Bayonne

Hudson County Park

Bayonne

Ahern Veterans Memorial Park

West 25th Street

Bayonne

PASSAIC RIVER

Gunnel Oval Park

Schuyler Avenue

Kearny

E.J. Vincent Waterfront Park

Bergen Avenue

Kearny

River Bank Park

Jackson Street Bridge

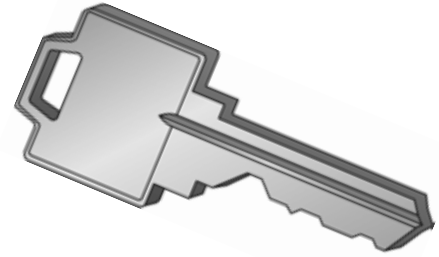
Newark

Nutley Municipal Ramp

Park Avenue

Nutley

Keyword Glossary



A

Adaptation 🔑 Any physical or behavioral characteristic of a plant or animal that enhances the species' ability to survive.

Anadromous 🔑 Migrating from the sea up a river to spawn.

Anatomy 🔑 The science that deals with plant and/or animal structure.

Angle 🔑 To fish with hook and line.

Angler 🔑 A person who fishes with a hook and line.

Aquatic 🔑 Living mostly or all the time in water.

B

Basalt 🔑 A dark-colored, fine-grained, extrusive igneous rock.

Bedrock 🔑 The solid rock that underlies unconsolidated surface materials such as soil.

Bioaccumulation 🔑 The storing of contaminants in living tissue, which can be transferred to other organisms, including humans, through the food web.

Biomagnification 🔑 The accumulation of substances in larger and larger quantities in the bodies of organisms at each higher level of the food chain.

Brackish 🔑 Water containing both salt and freshwater, as in an estuary.

C

Camouflage 🔑 Specific colors and/or patterns in an animal that enable it to blend into its surroundings and be less visible to its predators or prey.

Cartographer 🔑 A person who draws maps.

Catadromous 🔑 Migrating down a river to the sea to spawn.

Channel 🔑 The bed of a stream or waterway.

Commercial fishing 🔑 The industry of catching fish and other aquatic animals to sell for food.

Consumer 🔑 An organism that feeds on plants or animals, living or dead, to fuel its metabolism.

Contaminate 🔑 To render impure or unsuitable by contact or mixture with something unclean

Contamination 🔑 The act of contaminating.

Contour lines 🔑 A drawn line on a map that connects all the contiguous land that is the same elevation.

D

Decomposer 🔑 Plants or animals (mostly fungi and bacteria) that, as a byproduct of their metabolism, reduce organic

material to simpler organic and inorganic forms.

Detritus 🌀 Dead and decomposing organic material.

Diabase 🌀 A dark-colored, medium-grained, intrusive igneous rock.

Dioxins 🌀 Chemical byproducts of the manufacture of certain herbicides; U.S. EPA lists as probably cancer-causing substances.

Drainage basin 🌀 The largest watershed management unit which generally drains into a major water body such as a large river, bay or estuary, or lake. These generally cover several thousand square miles.

E

Ecosystem 🌀 A stable and self-perpetuating ecological unit in nature created by the interaction between living organisms and the non-living physical environment.

Elevation 🌀 The height to which a landform is raised above sea level.

Erosion 🌀 The wearing away of land due to natural processes (wind and water). Human practices, including deforestation and construction, hasten the rate of these processes.

Estuarine 🌀 Of or pertaining to an estuary

Estuary 🌀 A semi-enclosed coastal body of water which connects to the ocean and within which the salt water is diluted by fresh water from land drainage (brackish water).

F

Fishery 🌀 A place for catching fish and other aquatic animals.

Food chain 🌀 The transfer of food energy from producers through a series of consumers.

Food web 🌀 A series of food chains that are interconnected.

Freshwater marsh 🌀 A permanently wet area with a cover of non-woody vegetation.

G

Geology 🌀 The science that deals with the physical history of the earth.

Glacial lake 🌀 A lake created by glacial action.

Glacier 🌀 A thick sheet of ice formed when successive snowfalls accumulate at a rate exceeding the rate of melting.

Granite 🌀 A light-colored, coarse-grained igneous rock.

Granite gneiss 🌀 A metamorphic rock that began as granite, but was changed through intense heat and pressure over a long period of time.

Ground truth 🌀 The process of comparing a map against the actual site the map represents.

H

Habitat 🌀 The natural environment of an organism where it finds enough food, water, shelter, and space to live its full life cycle and reproduce others of its kind.

Headwaters 🌀 The uppermost reaches of a river, stream or watershed.

I

Indicator species 🌀 A plant or animal that indicates, by its presence in a given area, the existence of certain environmental conditions.

Inorganic 🌀 Not of, or from, living material and does not contain carbon.

L

Land reclamation 🌀 The act of restoring land to its original state prior to human development or manipulation.

Land use 🌀 A description of how the surface of the earth is utilized for human endeavors.

Land use management 🌀 Directing the use of specific parcels of land for specific purposes.

Land use planning 🌀 To create a set of regulations or guidelines that direct the use of specific land areas.

Landform 🌀 A natural feature of a land surface, e.g., mountain, lake, ridge, plateau, etc.

M

Migration 🌀 The seasonal movement of populations of a species from one location to another.

Mitigation 🌀 The replacement of natural habitat lost during human development of an area.

N

Natural resource 🌀 Any materials supplied by nature.

Non-point source pollution 🌀 Contaminants that originate from many sources, such as lawn herbicides, road pollution, animal waste, etc.; sometimes called “people pollution.”

O

Organic 🌀 Material that contains carbon

P

PCBs 🌀 Synthetic chemical compounds used mostly in the production of electrical equipment such as transformers and capacitors. These toxic substances have been determined to cause a variety of health problems.

Point source pollution 🌀 Contaminants that originate from specific place, like the end of a discharge pipe or factory.

Producer 🌀 Organisms that do not get their energy from retain other plants or animals. Producers are primarily green plants.

Protective coloration 🌀 Any pattern or camouflage that helps an organism blend into its surroundings and thus gives it protection from predators.

R

Recreational fishing 🌀 The sport of fishing where individuals catch fish and/or catch and release fish for pleasure.

River mouth 🏹 The downstream end of a river where it enters an ocean or other larger body of water.

S

Salt marsh 🏹 A wet area formed wherever shallow, sheltered ocean waters meet a gently sloping coast. The ecology of these areas is ruled by the twice daily flooding by salt water at high tides.

Sandstone 🏹 A rock formed from sand.

Sediment 🏹 Mineral or organic matter deposited by water, air or ice.

Shale 🏹 Fine-grained sedimentary rock composed of clay and silt.

Slope 🏹 The angle that is created between the top of a hill and the valley floor.

Spawn 🏹 To deposit eggs or sperm directly into the water, as fish do.

Subsistence fishing 🏹 The act of fishing which provides the major source of protein for an angler and his/her family.

T

Terminal moraine 🏹 A ridge of unconsolidated boulders, gravel and sand deposited at the end of a glacier's extent.

Tidal influence 🏹 Affected by the ocean's tide.

Tidal marsh 🏹 A wet area along the edge of a river or stream that is affected by the ocean tides.

Topographic map 🏹 A type of map that uses contour lines to represent changes in elevation and landforms.

Topography 🏹 The relief features or surface configuration of an area.

Tributary 🏹 Any stream or river that flows into a major river.

U

Upland 🏹 An area of higher elevation.

W

Watercourse 🏹 A stream of water, such as a river or a brook.

Watershed 🏹 The land area where water drains into an individual stream, lake, or other body of water.

Waterway 🏹 A river, canal or other body of water used as a route or way for transportation.

Z

Zoning 🏹 Of or pertaining to the division of a town or city into land use types.

APPENDIX G

Education Resources List

Aquatic Project WILD - Aquatic Education Activity Guide. Western Regional Environmental Education Council, Boulder, CO. 1987.

Bottle Biology - Mrill Ingram Kendall/Hunt Publishing Company, Dubuque, IO. 1993.

Bridges to the Natural World: A Natural History Guide for Teachers in Grades Pre-K to Six - Patricia Kane, et al. New Jersey Audubon Society, Franklin Lakes, NJ. 1991, Revised 2003.

Delaware Estuary Issues, US EPA, US Fish & Wildlife Service

Fishways, Ontario Ministry of Natural Resources 1991.

Ranger Rick's Nature Scope - Geology: The Active Earth. National Wildlife Federation, Washington, DC. 1988.

Ranger Rick's Nature Scope - Wading into Wetlands. National Wildlife Federation, Washington, DC. 1986.

Hooked on Fishing - Not on Drugs, Aquatic Resources Education Curriculum. Sport Fishing Association, Future Fisherman Foundation, Alexandria, VA.

Keepers of the Earth: Native American Stories and Environmental Activities for Children - Michael J. Caduto and Joseph Bruchac. Fulcrum, Inc., Golden, CO. 1988.

New Jersey WATERS: A Watershed Approach to Teaching the Ecology of Regional Systems - Dale A. Rosselet, et al. New Jersey Audubon Society, Bernardsville, NJ. 1999.

Project Learning Tree: Environmental Education Activity Guide (Pre K - 8). American Forest Foundation, Washington, DC. 1994.

Project WET Curriculum and Activity Guide. The Watercourse and Western Regional Environmental Education Council, Montana State University, Bozeman, MT. 1995.

Project WILD Elementary Activity Guide. Western Regional Environmental Education Council, Boulder, CO. 1983.

Sustaining the Future: Activities for Environmental Education in US History - Jeffrey L. Brown, editor. Global Learning, Inc., Union, NJ. 1995.

The Biology of the Hudson-Raritan Estuary: A Teacher's Guide. New Jersey Marine Sciences Consortium, Sandy Hook, NJ. 1998.

The Lenape or Delaware Indians - Herbert C. Kraft. Archaeological Research Center, Seton Hall University Museum, South Orange, NJ. 1996.

The Living Tidal Marsh Teacher's Guide - Grades 7-12. Public Service Electric & Gas, Newark, NJ.

The Ways of the Watersheds: An Educator's Guide to the Environmental and Cultural Dynamics of New York City's Water Supplies - Kathleen M. Haskin. Frost Valley YMCA, Claryville, NY. 1995.

WET in the City: Water Education for Teachers - Curriculum and Activity Guide K-12. Council for Environmental Education, Houston, TX. 1999.

WOW! The Wonders of Wetlands. Environmental Concern, Inc. and The Watercourse, Montana State University, Bozeman, MT. 1995.

Young People's Guide to Saltwater / Freshwater Fishing - Eleanor A. Bochenek. New Jersey SeaGrant Marine Advisory Service, Rutgers cooperative Extension

"Jersey Journeys." New Jersey Historical Society, 230 Broadway, Newark, NJ 07104.

"The Trashy History of the Meadowlands" - Robert Sikora. Hackensack Meadowlands Development Commission Environment Center, Lyndhurst, NJ.

NOTES